IN THE CLAIMS

1. (currently amended) A method for operating a gas turbine engine, including a first compressor, a second compressor, and a turbine, coupled together in serial flow arrangement, said method comprising:

channeling compressed airflow discharged from the first compressor through an intercooler having a cooling medium flowing therethrough;

operating the intercooler such that the compressed airflow is facilitated to be cooled and condensate is formed in the intercooler from the compressed airflow;

channeling the cooled compressed airflow and the condensate from the intercooler to an inlet of the second compressor to facilitate reducing an operating temperature of the gas turbine engine, wherein channeling the condensate comprises:

channeling the condensate from the intercooler to an annular manifold using an injection system coupled in flow communication between the intercooler and the manifold, wherein the injection system ~~to facilitate~~ facilitates supplying the condensate to a plurality of nozzles coupled to the manifold; and

ejecting the condensate from the plurality of nozzles to an inlet of the second compressor.

2. (original) A method in accordance with Claim 1 wherein said intercooler comprises a drain valve, said method further comprises channeling the condensate through the drain valve to a first storage tank.

3. (original) A method in accordance with Claim 2 further comprising channeling the condensate from the storage tank, through a first pump, to a demineralizer.

4. (original) A method in accordance with Claim 3 further comprising channeling the condensate from the demineralizer to a demineralizer holding tank.

5. (original) A method in accordance with Claim 4 further comprising channeling the condensate from the demineralizer holding tank to the second compressor using a second pump that is different than the first pump.

6. (original) A method in accordance with Claim 1 wherein channeling the condensate to an inlet of the second compressor further comprises channeling condensate through an injection assembly coupled to the inlet of the second compressor.

7. (original) A method in accordance with Claim 1 wherein channeling the condensate to an inlet of the second compressor further comprises channeling condensate to the inlet of the second compressor at a predetermined rate.

8. (original) A method in accordance with Claim 1 wherein channeling condensate to an inlet of the second compressor comprises channeling condensate through an injection system including a plurality of circumferentially spaced injectors, to the inlet of the second compressor at a predetermined rate.

9. (currently amended) A cooling system for a gas turbine engine that includes at least a first compressor, a second compressor, and a turbine, said cooling system comprising:

an intercooler coupled downstream from the first compressor such that compressed air discharged from the first compressor is routed therethrough, said intercooler having a working fluid flowing therethrough to facilitate cooling the compressed air to form condensate, said intercooler configured to discharge the cooled compressed air and the condensate to the second compressor;

an injection system coupled in flow communication ~~with~~ between said intercooler and the second compressor; and

an annular manifold extending circumferentially around the second compressor and comprising a plurality of nozzles, said injection system configured to channel the condensate discharged from said intercooler into said annular manifold to facilitate supplying a flow of condensate to said plurality of nozzles, said plurality of nozzles configured to eject

condensate into the second compressor, such that the condensate and the cooled compressed air facilitate reducing an operating temperature of the gas turbine engine.

10. (original) A cooling system in accordance with Claim 9 further comprising a condensate holding tank in flow communication with said intercooler, said condensate holding tank configured to receive said condensate formed in said intercooler.

11. (original) A cooling system in accordance with Claim 10 further comprising a first pump coupled in flow communication with said condensate holding tank.

12. (original) A cooling system in accordance with Claim 11 further comprising a demineralizer, said first pump directs said condensate through said demineralizer to a demineralizer holding tank.

13. (original) A cooling system in accordance with Claim 12 further comprising a second pump, different than said first pump, in flow communication with said demineralizer holding tank, said second pump configured to channel condensate from said demineralizer holding tank to said condensate injection system.

14. (original) A cooling system in accordance with Claim 9 wherein said condensate injection system comprises a plurality of injectors positioned circumferentially around an outer periphery of said second compressor.

15. (original) A cooling system in accordance with Claim 9 wherein said injection system is configured to channel condensate formed in said intercooler into said second compressor at a predetermined rate.

16. (currently amended) A gas turbine engine comprising:

a first compressor;

a second compressor downstream from said first compressor;

a turbine coupled in flow communication with said second compressor; and

a cooling system comprising:

an intercooler coupled downstream from said first compressor such that compressed air discharged from said first compressor is routed therethrough, said intercooler having a working fluid flowing therethrough to facilitate cooling the compressed air to form condensate, said intercooler configured to discharge the cooled compressed air and the condensate to ~~the~~ said second compressor;

a condensate injection system coupled in flow communication ~~with~~ between said intercooler and said second compressor; and

an annular manifold coupled in flow communication to said second compressor and comprising a plurality of nozzles, said condensate injection system configured to channel the condensate discharged from said intercooler into said plurality of nozzles for ejection into said second compressor, such that the condensate and the cooled compressed air facilitate reducing a temperature of said gas turbine engine.

17. (original) A gas turbine engine in accordance with Claim 16 wherein said cooling system further comprises a condensate holding tank in flow communication with said intercooler, said condensate holding tank configured to receive said condensate formed in said intercooler.

18. (original) A gas turbine engine in accordance with Claim 16 wherein said cooling system further comprises:

a first pump coupled in flow communication with said condensate holding tank;

a demineralizer in flow communication with said first pump; and

a demineralizer holding tank in flow communication with said demineralizer, said first pump directs said condensate through said demineralizer to said demineralizer holding tank.

19. (original) A gas turbine engine in accordance with Claim 16 wherein said injection system further comprises a plurality of injectors positioned circumferentially around an outer periphery of said second compressor.

20. (original) A gas turbine engine in accordance with Claim 16 wherein said injection system further comprises a plurality of injectors configured to channel a condensate formed in said intercooler into said second compressor at a predetermined rate.

21. (withdrawn/previously presented) A cooling system for a gas turbine engine that includes at least a first compressor, a second compressor, and a turbine, said cooling system comprising:

an intercooler coupled downstream from the first compressor such that compressed air discharged from the first compressor is routed therethrough, said intercooler having a working fluid flowing therethrough;

an injection system coupled in flow communication with said intercooler; and

an annular manifold extending circumferentially around the second compressor and comprising a plurality of nozzles, said injection system configured to channel condensate formed in said intercooler into said annular manifold to facilitate supplying a flow of condensate to said plurality of nozzles, said plurality of nozzles configured to eject condensate into the first compressor to facilitate reducing an operating temperature of the gas turbine engine.

22. (withdrawn) A cooling system in accordance with Claim 21 wherein said injection system is configured to channel a condensate formed in said intercooler into a low pressure compressor.

23. (withdrawn) A cooling system in accordance with Claim 22 further comprising a condensate holding tank in flow communication with said intercooler, said condensate holding tank configured to receive said condensate formed in said intercooler.

24. (withdrawn) A cooling system in accordance with Claim 23 further comprising a first pump coupled in flow communication with said condensate holding tank.

25. (withdrawn) A cooling system in accordance with Claim 24 further comprising a demineralizer, said first pump directs said condensate through said demineralizer to a demineralizer holding tank.

26. (withdrawn) A cooling system in accordance with Claim 25 further comprising a second pump, different than said first pump, in flow communication with said demineralizer holding tank, said second pump configured to channel condensate from said demineralizer holding tank to said condensate injection system.

27. (withdrawn) A cooling system in accordance with Claim 21 wherein said condensate injection system comprises a plurality of injectors positioned circumferentially around an outer periphery of said first compressor.